



# Waste Management, Inc.

## GENERATOR'S WASTE MATERIAL PROFILE SHEET



WASTE PROFILE SHEET CODE

TSDR

F-60590

**A GENERAL INFORMATION**

GENERATOR NAME Umetco Minerals Corporation TRANSPORTER \_\_\_\_\_  
FACILITY ADDRESS 137 - 47th Street TRANSPORTER PHONE \_\_\_\_\_  
Niagara Falls, NY 14303 GENERATOR USEPA ID \_\_\_\_\_  
GENERATOR STATE ID \_\_\_\_\_  
TECHNICAL CONTACT Donald J. Hansen TITLE Asst. Director PHONE 716/278-3573  
NAME OF WASTE Vanadium Bearing Slag  
PROCESS GENERATING WASTE \_\_\_\_\_

**B PHYSICAL CHARACTERISTICS OF WASTE**

COLOR _____	ODOR <input type="checkbox"/> NONE <input type="checkbox"/> MILD <input type="checkbox"/> STRONG DESCRIBE _____	PHYSICAL STATE @ 70°F <input type="checkbox"/> SOLID <input type="checkbox"/> SEMI SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> POWDER	LAYERS <input type="checkbox"/> MULTILAYERED <input type="checkbox"/> BI LAYERED <input type="checkbox"/> SINGLE PHASED	FREE LIQUIDS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO VOLUME _____ %
PH <input type="checkbox"/> < 2 <input type="checkbox"/> 7.1 10 <input type="checkbox"/> N/A <input type="checkbox"/> 2.4 <input type="checkbox"/> 10.1 12.5 <input type="checkbox"/> 4.1 6.9 <input type="checkbox"/> > 12.5 <input type="checkbox"/> 7.5 <input type="checkbox"/> EXACT _____	SPECIFIC GRAVITY <input type="checkbox"/> < 8 <input type="checkbox"/> 13 14 <input type="checkbox"/> 8 10 <input type="checkbox"/> 15 17 <input type="checkbox"/> 11 12 <input type="checkbox"/> > 17 <input type="checkbox"/> EXACT _____	FLASH POINT <input type="checkbox"/> < 70°F <input type="checkbox"/> > 200°F <input type="checkbox"/> CLOSED CUP <input type="checkbox"/> 70°F 100°F <input type="checkbox"/> NO FLASH <input type="checkbox"/> OPEN CUP <input type="checkbox"/> 101°F 139°F <input type="checkbox"/> EXACT _____ <input type="checkbox"/> 140°F 200°F		

**C CHEMICAL COMPOSITION (TOTALS MUST ADD TO 100%)**

See attached Material Safety Data Sheet and Radiochemical Data

**D METALS** ☒ TOTAL (PPM) ☐ EPA EXTRACTION PROCEDURE (mg/L)

ARSENIC (As)	SELENIUM (Se)
BARIUM (Ba)	SILVER (Ag)
CADMIUM (Cd)	COPPER (Cu)
CHROMIUM (Cr)	NICKEL (Ni)
MERCURY (Hg)	ZINC (Zn)
LEAD (Pb)	THALLIUM (Tl)
CHROMIUM HEX (Cr + 6)	

**E OTHER COMPONENTS** TOTAL (PPM)

CYANIDES	PCBS
SULFIDES	PHENOLICS

**F SHIPPING INFORMATION**

DOT HAZARDOUS MATERIAL? ☐ YES ☐ NO  
PROPER SHIPPING NAME \_\_\_\_\_  
HAZARD CLASS \_\_\_\_\_ ID NO \_\_\_\_\_ RQ \_\_\_\_\_  
METHOD OF SHIPMENT ☐ BULK LIQUID ☐ BULK SOLID  
☐ DRUM (TYPE/SIZE) \_\_\_\_\_  
ANTICIPATED VOLUME \_\_\_\_\_ GALS \_\_\_\_\_ CUBIC YARDS  
OTHER \_\_\_\_\_  
PER ☐ ONE TIME ☐ WEEK ☐ MONTH  
☐ QUARTER ☐ YEAR

**G HAZARDOUS CHARACTERISTICS**

REACTIVITY ☐ NONE ☐ PYROPHORIC ☐ SHOCK SENSITIVE  
☐ EXPLOSIVE ☐ WATER REACTIVE ☐ OTHER \_\_\_\_\_  
OTHER HAZARDOUS CHARACTERISTICS  
☐ NONE ☒ RADIOACTIVE ☐ ETIOLOGICAL  
☐ PESTICIDE MANUFACTURING WASTE ☐ OTHER \_\_\_\_\_  
USEPA HAZARDOUS WASTE? ☒ YES ☐ NO  
USEPA HAZARDOUS CODE(S) \_\_\_\_\_  
STATE HAZARDOUS WASTE? ☐ YES ☐ NO  
STATE CODE(S) \_\_\_\_\_

**H SPECIAL HANDLING INFORMATION**☐ ADDITIONAL PAGE(S) ATTACHED

I HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS COMPLETE AND ACCURATE AND THAT ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED

AUTHORIZED SIGNATURE

TITLE

DATE

Donald J. Hansen Assistant Director

5/15/86

# Material Safety Data Sheet

Umetco Minerals Corporation requests that users of this Umetco product study this data sheet to become aware of the product's hazards and promote safe handling of the product by making this information available to its employees, agents, and

contractors. If the material is resold, Umetco Minerals Corporation requests that the purchaser be furnished a copy of this data sheet and advised to provide the information herein to its employees, agents and contractors

## SECTION I PRODUCT IDENTIFICATION

Product Name. SLAG-VANADIUM BEARING	C.A.S. Numbers: 1344-28-1, 1305-78-8, 1309-48-4, 1314-62-1, 1314-37-7; 60676-86-0.
Chemical/Alloy Name. Same as above.	Formula/Composition. $Al_2O_3$ 42-83%, CaO 2-26%, MgO 10-25%, $V_2O_5$ 0.04-1%, $V_2O_3$ 0.4-4.5%, $SiO_2$ 0.05-6.5%.
Synonyms. None.	

## SECTION II PHYSICAL DATA

Size. 25 lbs. pieces by down.	Solubility in Water. (g./100 cc) Not available.
Specific Gravity. ( $H_2O=1$ ) 3.6.	Melting Range. $^{\circ}F$ ( $^{\circ}C$ ) 2730-3090 (1500-1700).
Odor. None.	Boiling Point: Not applicable
Appearance Light gray to black lumps.	Vapor Pressure. Not applicable.
Bulk Density: 125-130 lb/cu ft	Percent Volatile: Not applicable.
Molecular Weight. $Al_2O_3$ 102, CaO 56, MgO 40, $V_2O_3$ 182, $V_2O_4$ 150, $SiO_2$ 60.	Evaporation Rate. Not applicable.

## SECTION III HAZARDOUS INGREDIENTS

Material or Component (CAS #)	Weight %	PEL Data (TWA Unless Noted)
Aluminum Oxide, $Al_2O_3$ (1344-28-1)	42-83	5 mg/cu m, respirable dust (1)(3), 15 mg/cu m(1) and 10 mg/cu m(2)(3), total dust
Calcium Oxide, CaO (1305-78-8)	2-26	5 mg/cu m(1)(2), 2 mg/cu m(3).
Magnesium Oxide, MgO (1309-48-4)	10-25	15 mg fume/cu m(1), 10 mg fume/cu m(2)(3).
Vanadium Pentoxide, $V_2O_5$ (1314-62-1)	0.04-1	Except for the NIOSH recommendation (4) the following listed PELs apply only to the compound $V_2O_5$ . It is suggested that they be applied to $V_2O_3$ with the vanadium content expressed as the equivalent contained V. 0.5 mg $V_2O_5$ dust/cu m, ceiling (1), 0.1 mg $V_2O_5$ fume/cu m, ceiling (1), 0.5 mg V/cu m ( $V_2O_5$ dust) (2), 0.05 mg V/cu m, ceiling $V_2O_5$ fume (2), 0.05 mg $V_2O_5$ /cu m (resp. dust or fume)(3), 0.05 mg V/cu m, 15 min. ceiling (V compounds (4).
Vanadium Trioxide, $V_2O_3$ (1314-37-7)	0.4-4.5	
Vitreous Silica, $SiO_2$ (60676-86-0)	0.05-6.5	(10 mg/cu m)/(% $SiO_2+2$ ), resp. dust (1,2,3), (30 mg/cu m)/(% $SiO_2+2$ ) total dust (1), (30 mg/cu m)/(% $SiO_2+3$ ) total dust (2,3), 0.05 mg/cu m resp. $SiO_2$ (4).
References 1 OSHA Standard 1910 2 MSHA Standard 3 Current ACGIH 4 NIOSH Recommendation 5 Umetco Internal Standard		

**Emergency H.E.L.P. Telephone: 304-822-4357**

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UCCNHT0000540

## SECTION IV HEALTH HAZARD DATA

[Adverse Health Effects Which May Occur From Overexposure(\*)]

No adverse effects are anticipated from exposure to dust-free material. Specific health hazard data for the combination of ingredients are not available. The general nature of the expected health hazards from exposure to dust have been inferred from those of the individual components. (Exposure to fume is not expected from this material.)

## EFFECTS OF A SINGLE OVEREXPOSURE(\*)

Swallowing. May cause irritation and burns of the throat, esophagus, and stomach.

Skin Absorption: Not absorbed.

Inhalation: Causes irritation of nose, throat, and lungs. Vanadium dust may cause chest pain, coughing, and wheezing.

Skin Contact: May cause irritation and burns.

Eye Contact: May cause severe irritation and corneal burns.

## EFFECTS OF REPEATED OVEREXPOSURE(\*)

May cause ulceration of the skin and nasal passage, nasal perforation, and pulmonary fibrosis. Skin and pulmonary sensitivity to vanadium compounds has been reported.

## OTHER EFFECTS OF OVEREXPOSURE(\*)

Inhalation of vanadium compounds may cause a harmless greenish-black discoloration of the tongue that disappears with removal from exposure.

## SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION

Vanadium has caused elevated blood pressure in animals, but this has not been observed in humans.

## AGGRAVATION OF PRE-EXISTING CONDITIONS

Inhalation may aggravate pulmonary conditions.

## EMERGENCY AND FIRST AID PROCEDURES

Swallowing: If a large quantity of slag dust has been swallowed and the person is conscious, give large quantities of water immediately. Do not attempt to induce vomiting. Call a physician immediately.

Skin: If slag dust gets on the skin, immediately wash the contaminated area with large amounts of mild soap and water. If irritation persists after washing, get medical attention.

Inhalation: Remove to fresh air. If breathing is difficult, oxygen may be administered. If breathing has stopped, administer artificial respiration, preferably by mouth. Call a physician.

Eyes: If slag gets into the eyes, immediately flush with large amounts of water, lifting the lower and upper lids occasionally. Get medical attention immediately.

## NOTES TO PHYSICIAN

There is no specific antidote. Treatment of overexposure should be directed at the control of the symptoms and the clinical conditions.

\*) Failure to follow the precautionary measures recommended in Sections V, VI, VII, VIII, and IX may result in overexposure.

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SECTION V FIRE AND EXPLOSION DATA

Combustibility: Will not burn.	Flammable Limits: Not applicable.
Flash Point (Test Method): Not applicable.	Autoignition Temperature: Not applicable.
Explosion Tendency: Not applicable. Will not burn.	
Extinguishing Media: No fire hazard. Use extinguishing agent suitable for type of surrounding fire.	
Special Fire-Fighting Procedures: Avoid procedures that create dust. When fighting a fire involving Slag - Vanadium Bearing, wear full protective equipment including positive-pressure breathing apparatus.	
Unusual Fire and Explosive Hazard: None.	

SECTION VI REACTIVITY DATA

Stability: Stable at ambient conditions. Moderately soluble in acids and NH <sub>4</sub> salts.
Conditions to Avoid: None known.
Hazardous Decomposition Products: None known.
Materials to Avoid: Acids.

SECTION VII SPILL, LEAK, AND DISPOSAL INFORMATION

Steps to be Taken if Material is Spilled or Released: Restrict persons not involved with cleanup from the area of the spill until cleanup is completed. Use exhaust ventilation, if available, to control the level of airborne dust. Use shovel or mechanical means to scoop up spilled material and return to storage area or container. Avoid maneuvering with compressed air or any other method which causes dust. Cleanup personnel should wear skin and eye protection and avoid the inhalation of dust by the use of proper respiratory protection.
Neutralizing Agents: Not applicable.
Waste Disposal Method: This material contains vanadium pentoxide which is listed in 40 CFR 302, Table 302.4, "List of Hazardous Substances and Reportable Quantities" with a reportable quantity of 1000 pounds. Some states may have more restrictive listings. Dispose of in accordance with federal, state, and local regulations. Do not use procedures which create dust.

SECTION VIII SPECIAL PROTECTION INFORMATION

Ventilation:	Provide sufficient mechanical (general and/or local exhaust) ventilation combined with administrative controls, if applicable and needed, to keep exposures below the permissible exposure limit.
Eye Protection:	Dust resistant safety glasses should be worn. Facilities to flush the eyes with water should be readily available.
Gloves/Clothing:	Impervious gloves and protective clothing should be worn in dusty areas. Safety showers should be readily available.
Other:	If non-impervious clothing becomes contaminated with dust, it should be removed promptly and not reworn until the dust is removed.

SECTION VIIISPECIAL PROTECTION INFORMATION (Continued)Personal Protective Equipment:

Concentration Range (mg/cu m Total Dust)	Approved Respirator Type (30 CFR 11)
Greater than 1.5 but less than or equal to 15.	Particulate filter, quarter-mask or half-mask facepiece Air-line, demand, quarter-mask or half-mask facepiece, with or without escape provisions Hose mask, with or without blower, full facepiece Self-contained breathing apparatus, demand type open circuit or negative-pressure type, closed-circuit, quarter-mask or half-mask facepiece
Greater than 15 but less than or equal to 150	Particulate filter, full facepiece. Powered particulate filter, any respiratory inlet cover. Air-line, demand, full facepiece, with or without escape provisions Self-contained breathing apparatus, demand type open-circuit or negative-pressure type, closed-circuit, full facepiece
Greater than 150 but less than or equal to 300	Powered particulate filter, any respiratory inlet covering with high efficiency filter Air-line, continuous flow or pressure-demand type, any facepiece, without escape provisions Air-line, continuous flow, helmet, hood or suit, without escape provisions
Greater than 300 or entry into or escape from unknown concentrations	Air-line, continuous flow or pressure-demand type, any facepiece, with escape provisions. Air-line, continuous flow, helmet, hood or suit, with escape provisions Self-contained breathing apparatus, pressure-demand type, open-circuit or positive-pressure type, closed-circuit quarter-mask, half-mask, or full facepiece
Fire fighting	Self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive-pressure mode
Added Note: If the air contaminant causes eye irritation to the wearer of a respirator equipped with a quarter-mask or half-mask facepiece or mouthpiece and nose clamp, use a protective, tight fitting goggle or a respirator equipped with a full facepiece	

SECTION IXSPECIAL PRECAUTIONSPrecautionary Statements:CAUTION

OVEREXPOSURE\* TO DUST MAY CAUSE IRRITATION AND BURNS OF THE EYES, SKIN, NOSE, THROAT, ESOPHAGUS, AND LUNGS WITH POSSIBLE CHEST PAIN, COUGHING, WHEEZING, AND AGGRAVATION OF PRE-EXISTING PULMONARY CONDITIONS.

EXTREME OR REPEATED OVEREXPOSURE\* MAY CAUSE ULCERATION OF THE SKIN AND NASAL PASSAGE, NASAL PERFORATION, AND PULMONARY FIBROSIS. SKIN AND PULMONARY SENSITIVITY AND ELEVATED BLOOD PRESSURE HAVE BEEN REPORTED.

Avoid Swallowing or Breathing Dust.  
Use Only With Adequate Ventilation.  
Avoid Actions Which Generate Dust.

Avoid Contact With Eyes, Skin, or Clothing.  
Wear Approved Respirator and Protective Clothing in Dusty Areas.  
Wash Thoroughly After Handling.

\*Estimated as greater than 1.5 mg of total dust/cu m.

FOR INDUSTRIAL USE ONLY

Precautions for Handling and Storage: Storage in a manner that permits windblown dust should be avoided. Eating and smoking should not be permitted in areas where slag-vanadium bearing dust is present. Wash hands thoroughly with soap or mild detergent and water before eating, smoking, or using toilet facilities.

Other Precautions:Carcinogen Listing:

National Toxicology Program Annual Report (NTP): Not listed.  
International Agency for Research on Cancer (IARC): Not listed.  
OSHA 29 CFR Part 1910, Subpart Z: Not listed

Umetco Minerals Corporation believes that the data herein are current as of the effective date of this data sheet, and that the opinions herein are those of qualified experts. Since the product and the information herein will be used outside the control of Umetco Minerals Corporation, it is the user's responsibility to establish conditions for safe use of the product. The data herein relate only to the product of Umetco Minerals Corporation and may not be applicable for products of other manufacturers.

RADIOCHEMICAL DATA

Total Uranium and Thorium Source Material 355 ppm

Gamma Radiation 150  $\mu$ R/hr

Note: New York Limit for Uncontrolled Area 500 ppm Total Source Material and  
250  $\mu$ R/hr.